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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WONG, BLANCHE

ART UNIT PAPER NUMBER

2667

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,423

Applicant(s)

SRIKRISHNA ET AL.

Examiner

Blanche Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 19-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 15-18 is/are objected to.
- 8) ☒ Claim(s) 19-30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2 in '012 in '02; '03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-18, drawn to a channel assignment scheme, classified in class 370, subclass 431.
 - II. Claims 19-23, drawn to a method to determine a quality of a link, classified in class 370, subclass 229.
 - IV. Claims 24-30, drawn to a method to allocate communication channels, classified in class 370, subclass 329.
2. Inventions I-III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as maintaining the first channel and the second channel distinct from uplink channel of an upstream node. Invention II has a separate utility such as deducing, at the originating node, different rates based on a number of packets received without error. Invention III has a separate utility such as periodically evaluating a downstream channel by receiving a plurality of packets from each downstream node for each of a plurality of channels. See MPEP § 806.05(d).
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II or III, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Brian Schwartz on November 22, 2004, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-18. Affirmation of this election must be made by applicant in replying to this Office action. Claim 19-30 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

6. The disclosure is objected to because of the following informalities:

On p. 5, Applicant is requested to modify the descriptions for Fig. 6 and 8 to differentiate the different embodiments because the two descriptions are identical.

On p. 5, Applicant is requested to add "a protocol for" in front of -- channel assignment -- in Fig. 11 because a flowchart can illustrate a protocol, but not an embodiment of channel assignment.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The term "best" in cl. 13, ln. 6 and cl. 14, ln. 3, is a relative term which renders the claim indefinite. The term "best" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Best is a relative term. What is good on one scale can be best on another scale.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-4,12 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Hayashi et al. (U.S. Pat No. 6,611,509).

With regard to claim 1, Hayashi discloses a separate (the first channel and the second channel distinct from uplink channel) forward link (a first channel to an uplink for a node) and reverse link (a second channel for a downlink for a node). See Fig. 4, col. 8, ln. 20-27.

With regard to claim 2, Hayashi further discloses forward and reverse link in different timeslot (timeslots 0-15 in Fig. 4, col. 8, ln. 20-27) (half duplex; Half duplex refers to a communication method where uplink and downlink data are not transferred during distinct time periods).

With regard to claims 3 and 4, Hayashi further discloses frequency band col. 1, ln. 29 (frequency channel) in a CDMA system access by a spread spectrum communication in which information signals are spread by a spreading code to transmit over a spread band col. 1, ln. 29-32 (different spreading codes in a spread-spectrum CDMA system).

With regard to claim 12, Hayashi further discloses control section 125, Fig. 2 (gateway of the node) (acting as gateway, see also col. 4, ln. 23-24 and ln. 50-55; col. 5, ln. 3-6 and ln. 32-59).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Anderson et al. (U.S. Pat No. 5,818,820).

With regard to claim 5, Hayashi discloses the method in claim 1. However, Hayashi fails to explicitly show different polarizations of the transmitted waveform, as recited in claim 1.

In an analogous art, Anderson discloses polarization in transmission and reception. Col. 12, ln. 12-16.

A person of ordinary skill in the art would have been motivated to employ Anderson in Hayashi in order to obtain polarization. The suggestion/motivation to do so would have been to provide for a simple and flexible over-air protocol for use with a mobile telephone system. Anderson, col. 1, ln. 50-51. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Hayashi and Anderson to obtain the invention as specified in claim 5.

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Grubeck et al. (U.S. Pat No. 6,449,484).

With regard to claim 6, Hayashi discloses the method of claim 1. However, Hayashi fails to explicitly show different spatial signatures as determined by a smart antenna or adaptive antenna array at the receiver.

In an analogous art, Grubeck discloses positioning configurations (spatial signatures) as determined by adaptive antenna. Col. 7, ln. 66-col. 10. ln. 28.

A person of ordinary skill in the art would have been motivated to employ Grubeck in Hayashi in order to obtain adaptive antenna. The suggestion/motivation to do so would have been to provide for a solution to the problem of optimally assigning

several simultaneous mobile stations to the channels of a base station. Grubeck, col. 3, ln. 8-10. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Hayashi and Grubeck to obtain the invention as specified in claim 6.

15. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Larsson (U.S. Pat No. 6,798,765).

With regard to claim 6, Hayashi discloses the method of claim 1. However, Hayashi fails to explicitly show determining a plurality of potential channels for communication; sending a reservation packet to trigger testing of each of the plurality of potential channels; and determining a best channel based on responses to the reservation packet, as recited in claim 13.

In an analogous art, Larsson discloses a message broadcast (sending a reservation packet to test each of plurality of potential channels) to A,B,C,D (plurality of potential channels) each of which suppose to acknowledge originating station O and O evaluate and select the forwarding node (determining a best channel based on responses to the reservation packet). Fig. 1, col. 5, ln. 10-49; See also Fig. 7 and 8.

A person of ordinary skill in the art would have been motivated to employ Larsson in Hayashi in order to obtain quality of a link. The suggestion/motivation to do so would have been to provide for a faster forwarding algorithm put on top of a traditional, pro-active routing information protocol that itself is inherently slow. Larsson, col. 2, ln. 15-18. At the time the invention was made, therefore, it would have been

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obvious to one of ordinary skill in the art to which the invention pertains to combine Hayashi and Larsson to obtain the invention as specified in claim 13.

Allowable Subject Matter

16. Claims 7-11,15-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BW

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November 24, 2004



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